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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/522,470	03/09/2000	Hiroshi Katakura	000267	3147

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EXAMINER
DO, CHAT C

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 01/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/522,470	KATAKURA ET AL.
	Examiner	Art Unit
	Chat C. Do	2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2000 and 16 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *3-6 and 9-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-2 and 7-8, drawn to a leaf cell in class 326, subclass 104.

II. Claims 3-5 and 10-11, drawn to a logic circuit for magnitude comparison, classified in class 708, subclass 671.

III. Claims 6 and 12, drawn to a logic circuit for adding signals, classified in class 708, subclass 700.

IV. Claim 9, drawn to a logic circuit for adding signals with carry generation, classified in class 708, subclass 706.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of the Group I-IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention of Group I-IV has separate utility such as selecting the signal and its inversed signal by the external control signal, comparing magnitude, adding the signals, manipulating the signals, and adding signals with carry generation. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II-IV, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Applicant's election without traverse of invention Group I, claims 1-2 and 7-8, in Paper No. 5 received December 16 2002 is acknowledged.

7. Claims 3-6 and 9-12 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5 received December 16 2002.

Specification

8. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

9. The abstract of the disclosure is objected to because the abstract exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

10. The disclosure is objected to because of the following informalities: the second paragraph in page 11 lines 16-25 and the first paragraph in page 12 lines 9-18 are similar in content.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Re claim 7, neither the specification nor the drawings address the limitations in claim 7. Specially, the first and second outputting sections are not addressed clearly to enable one skilled in the art to use the invention.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1-2 and 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 1, this claim recites the inversion section for inverting an input signal and outputting the inverted signal in page 123 lines 2-8. However, the specification in page 11 line 18 and the drawings 1-3 indicate that the input signal goes through double invertors (1aa and 1ab in Figure 1 part 1a). It is unclear how the inversion section outputs the inverted signal by inverting an inverted signal of the input signal. Claims 2 and 7-8 have the same limitation. Thus, claims 2 and 7-8 are also rejected under the same rationale in the rejected claim 1.

Re claim 7, this claim recites "first outputting section...being switched with...input signal" in page 127 lines 15-17. It is unclear whether the resulting signals of the first inversion section and the second inversion section being switched or the signal inside the inversion sections being switched. In addition, it is unclear whether the second input signal and the inverted signal of the second input signal are the control signal for the mentioned switch. The examiner disregards this claim.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Freeman (U.S. Re.34,363).

Re claim 1, Freeman discloses in Figure 1 a logic circuit (22) comprising: a first inversion section (A) for inverting a first input signal having one of positive logic and negative logic and outputting the inverted signal; a second inversion section (B) for inverting a second input signal having the other the positive logic and the negative logic and outputting the inverted signal; and a transmission section (output C) for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value which depends upon an externally controllable selection signal (SEL.) and an inverted signal of the selection signal. Basically, the present invention circuit is logic circuit that selectively outputting a signal from one of inputting inverted signals by the control signal. Freeman discloses in the specification that this logic circuit is called an inverting one of two inputs multiplexer (col. 4 line 29).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claim 2 is rejected under 35 U.S.C. 103(a) as being obvious over Freeman (U.S. Re.34,363) in view of Song (U.S. 6,012,079).

Re claim 2, it has all the limitations in claim 1. In addition, it has a first outputting section for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value which depends upon an externally controllable first selection signal and an inverted signal of the first selection signal; and a second outputting section for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value which depends upon an externally controllable second selection signal and an inverted signal of the second selection signal. In another words, the logic circuit comprises two multiplexors with common inputs but separate control signals. Freeman does not disclose the features of the second outputting section for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value, which depends upon an externally controllable second selection signal and an inverted signal of the second selection signal. However, Song discloses in the prior art drawings 4A and 4B comprising first outputting section (D0, D1 and bar(OUT)) for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value which depends upon an externally controllable first selection signal (S) and an inverted signal (bar(S)) of the first selection signal; and a second outputting section (bar(D0), bar(D1), and bar(OUT)) for selectively outputting one of the output of said first inversion section and the output of said second inversion section in accordance with a logical value which depends upon an externally controllable second selection signal (S) and an inverted signal (bar(S)) of the second selection signal.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to cascade two outputting sections together because it would enable the operator to output two signals depending on the control signal.

19. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Freeman (U.S. Re.34,363) in view of Taki (U.S. 6,005,418).

Re claim 8, it has all the limitations in claim 1. Claim 8 further recites a first switching section provided on an input side of first inversion section and capable of performing switching of whether the first input signal should be passed or blocked in accordance with an external control signal; and a second switching section provided on an input side of second inversion section and capable of performing switching of whether the second input signal should be passed or blocked in accordance with the external control signal. Freeman does not disclose the first and second switching sections which capable of performing switching of whether the first and second input signals should be passed or blocked in accordance with an external control signal. However, Taki discloses in Figure 4 a first switching section (Input 0) provided on an input side of first inversion section and capable of performing switching of whether the first input signal should be passed or blocked in accordance with an external control signal (bar(C0)); and a second switching section (Input 1) provided on an input side of second inversion section and capable of performing switching of whether the second input signal should be passed or blocked (abstract) in accordance with the external control signal (output of Input 0). Therefore, it would have been obvious to a person having ordinary skill in the

art at the time the invention is made to include the switching section for each input signal because it would enable the operator to freely control the input signals.

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. U.S. Patent No. 5,523,707 to Levy et al. disclose a fast low power exclusive OR circuit.

b. U.S. Patent No. 4,064,421 to Gajski et al. disclose a high speed modular arithmetic apparatus having a mask generator and a priority encoder.

c. U.S. Patent No. 4,870,302 to Freeman discloses a configurable electrical circuit having configurable logic elements hand configurable interconnects.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chat C. Do
Examiner
Art Unit 2124

December 27, 2002

KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100